

Appl. No. 09/641,535  
Reply dated July 9, 2004  
Reply to Office Action mailed March 29, 2004  
Attorney Docket No. 2101785-991100

1. Amendments to the Claims:

1. (Currently Amended) A system for renting a software program in a distributed computing environment, wherein the rental software program includes a main executable file and optional files called by the main executable file that are executed by the main executable file to implement the rental software program without the rental software program being installed on the user computer system, comprising:

a user computer system including means for initially downloading the main executable file of the rental software program to begin execution of the rental software program and means, if an optional file is missing, for automatically requesting one or more optional files contained in the rental software program in order to continue execution of the rental software program using the optional files;

a server computer system for downloading the main executable file contained in the rental software program to be executed in said user computer system and means for automatically downloading the one or more optional files as requested by said user computer system; and

wherein the user computer system further comprises a process manager means further comprising means for creating and running a process corresponding to the main executable file, means for suspending the process if the process requests one or more optional files, and means for re-starting the process if said process manager means receives the one or more optional files from said server computer system; and

wherein the process manager flushes the main executable file and the optional files of the rental software program from the user computer system so that the rental software program is removed from the user computer system when the rental is completed.

2. (Previously Presented) The system as recited in Claim 1, wherein the user computer system further comprising:

a storage means for storing the main executable file, the one or more optional files contained in the rental software program if downloaded and a list of optional files downloaded from said server computer system; and

a monitor means for monitoring the process to determine whether the process requests the one or more optional files, and further comprising means for intercepting a message requesting the one or more optional files from the process, and means for automatically requesting the one or more optional files to said server computer system.

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3. (Original) The system as recited in claim 2, wherein said server computer system further comprising means for sending the list of optional files to said user computer system when said server computer sends the main executable file to said user computer system and wherein the optional files includes a registry file.

4. (Original) The system as recited in claim 3, wherein said user computer system further includes:

a protection means for protecting the rental software program rented from said server computer system to prevent an unauthorized use committed by said user computer system;

a converting means for converting registry file information contained in the list of optional files into registry file information appropriate to said user computer system; and

a billing database for storing billing information.

5. (Original) The system as recited in claim 4, wherein the billing information includes a billing start time, a billing end time and a name of the rental software program selected by said user computer system.

6. Cancelled.

7. (Original) The system as recited in claim 1, wherein said server computer system includes:

a verification means for verifying said user computer system by using identification information of said user computer system stored in a user-information database;

a program database for storing path information of the main executable file, a list of rental software programs and a list of the optional files;

an analyzing means for analyzing a new rental software program when the new rental software program is installed in said server computer system, wherein said analyzing means further comprises means for storing the path information of the main executable file and a list of the optional files, associated with the new rental software program, in said program database;

a storage means for storing the main executable file and the one or more optional files; and

a means for obtaining and sending the main executable file stored in said storage means when said user computer system selects the desirable rental software program; and

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means for obtaining and sending the one or more optional files stored in said storage means when said user computer system optionally requests the one or more optional files to said server computer system.

8. (Original) The system as recited in claim 7, wherein said server computer system further includes:

a billing means for processing charge or fee to be paid for the usage of the main executable file and the one or more optional files associated with the rental software program provided to said user computer system;

a log database for storing a log file necessary for recovering said server computer system when said server computer system is not operable due to a serious error;

a recovery means for recovering said server computer system by using the log file stored in said log database when said server computer system is not operable due to the serious error;

a schedule management means for managing a schedule of requests from said user computer system and another user computer system; and

a session management means for managing a communication session between said user computer system and said server computer system.

9. (Original) The system as recited in claim 8, wherein said server computer system sends the list of optional files to said user computer system when said server computer system sends the main executable file to said user computer system and wherein the optional files includes a registry file.

10.(Currently Amended) A method for renting a rental software program in a distributed computing environment, wherein the rental software program includes a main executable file and optional files called by the main executable file that are executed by the main executable file to implement the rental software program without the rental software program being installed on the user computer system, comprising:

performing a communication connection between a user computer system and a server computer system, wherein the user computer system is based on a user-transparent program install-free technology;

displaying a list of rental software programs downloaded from the server computer system;

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selecting the rental software program in the list of rental software programs;  
downloading a main executable file associated with the rental software program from the server computer system to run a process corresponding to the main executable file and begin execution of the rental software program; and  
if the process needs one or more optional files, downloading the one or more optional files from the server computer system in order to continue execution of the rental software program using the optional files, further comprising monitoring the process in the file monitor in order to determine whether the process needs the one or more optional files;  
if the process needs the one or more optional files, hooking a message requesting the one or more optional files from process;  
suspending the process until the user computer system downloads the one or more optional files from the server computer system; and  
if the user computer system downloads the one or more optional files from the server computer system, re-running the process; and  
wherein the process manager flushes the main executable file and the optional files of the rental software program from the user computer system so that the rental software program is removed from the user computer system when the rental is completed.

11. (Original) The method as recited in claim 10, wherein establishing the communications further comprises:

performing the communication connection between the user computer system and the server computer system; and  
verifying the user computer system in the server computer system.

12. (Original) The method as recited in claim 10, wherein downloading the file further comprises:

downloading the main executable file and a list of optional files from the server computer system, wherein the optional files include a registry file;  
converting registry file information contained in the list of optional files into registry file information appropriate to the user computer system;  
running a file monitor and a protector, which protects the rental software program including the main executable file and the one or more optional files from an unauthorized use committed by

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the user computer system;

storing a name of the rental software program selected by the user computer system and a billing start time in a billing information database of the user computer system;

informing the server computer system of the billing start time; and

creating and running the process corresponding to the main executable file.

13. Cancelled.

14. (Original) The method as recited in claim 11, wherein the process completion step further comprises:

determining whether the process has been complete;

if the process has been complete, performing a procedure accompanying a process completion;

determining whether the user computer system wants to select another rental software program;

if the user computer system wants to select the another rental software program, repeating the steps to download the optional files; and

if the user computer system does not want to select the another rental software program, terminates the communication connection between the user computer system and the server computer system.

15. (Original) The method as recited in claim 14, wherein the process completion step further comprises:

if the process has been complete, terminating the file monitor and the protector;

storing a billing end time in the billing information database of the user computer system;

informing the server computer system of the billing end time; and

flushing the main executable file and the one or more optional files stored in the storage device of the user computer system.

16. (Currently Amended) A method for servicing an install-free application in an online software rental system without the rental software program being installed on the client computer system, comprising:

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getting a list of applications available for a rental service from a server computer system;  
establishing a rental session between a client computer system and the server computer system;

fetching one or more application software from a plurality of application software stored in the server computer system;

executing the one or more application software in the client computer system using a main executable file and one or more optional files, wherein the one or more application software include a main executable file and wherein executing the application software further comprises:

creating a process corresponding to the main executable file;

running the process;

monitoring additional requests to access related files from the process by message hooking and file monitoring while the process is running;

if the process needs any related file, generating a message requesting one or more related files and transmitting the message to the server computer system to fetch the one or more related files based on an on-demand scheme; and

re-running the process after the one or more related files are delivered to the client computer system in order to incrementally execute the rental software program using the optional files; and

if said prior step is complete, flushing the one or more application software rented from the server computer system so that the rental software program is removed from the client computer system when the rental is completed.

17. The method as recited in claim 16, wherein the list of applications is established on Internet.

18. Cancelled.

19. (Original) The method as recited in claim 16, wherein the one or more application software is authorized by the server computer system.

20. Cancelled.

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21. (Currently Amended) A computer-readable media storing program instructions, the program instructions disposed on a computer to perform a method for renting a rental software program in a distributed computing environment without the rental software program being installed on the user computer system, wherein the rental software program includes a main executable file and optional files called by the main executable file that are executed by the main executable file to implement the rental software program, comprising the steps of:

establishing a communication connection between a user computer system and a server computer system, wherein the user computer system is based on a user-transparent program install-free technology;

displaying a list of rental software programs downloaded from the server computer system;

selecting the rental software program in the list of rental software programs;

downloading a main executable file associated with the rental software program from the server computer system to run a process corresponding to the main executable file to begin executing the rental software program; and

if the process needs one or more optional files, downloading the one or more optional files from the server computer system in order to continue execution of the rental software program using the optional files; and

wherein downloading optional files further comprises monitoring the process in the file monitor in order to determine whether the process needs the one or more optional files; if the process needs the one or more optional files, hooking a message requesting the one or more optional files from process; suspending the process until the user computer system downloads the one or more optional files from the server computer system; and if the user computer system downloads the one or more optional files from the server computer system, re-running the process; and

flushing the main executable file and the optional files of the rental software program from the user computer system so that the rental software program is removed from the user computer system when the rental is completed.

22. (Original) The computer-readable media as recited in claim 21, wherein establishing the communications further comprises:

performing the communication connection between the user computer system and the server computer system; and

verifying the user computer system in the server computer system.

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23. (Original) The computer-readable media as recited in claim 21, wherein downloading further comprises:

downloading the main executable file and a list of optional files from the server computer system, wherein the optional files include a registry file;

converting registry file information contained in the list of optional files into registry file information appropriate to the user computer system;

running a file monitor and a protector, which protects the rental software program including the main executable file and the one or more optional files from an unauthorized use committed by the user computer system;

storing a name of the rental software program selected by the user computer system and a billing start time in a billing information database of the user computer system;

informing the server computer system of the billing start time; and

creating and running the process corresponding to the main executable file.

24. Cancelled.

25. (Original) The computer-readable media as recited in claim 22, wherein downloading the optional files further comprises:

determining whether the process has been complete;

if the process has been complete, performing a procedure accompanying a process completion;

determining whether the user computer system wants to select another rental software program;

if the user computer system wants to select the another rental software program, repeating the application software downloading steps; and

if the user computer system does not want to select the another rental software program, terminates the communication connection between the user computer system and the server computer system.

26. (Original) The computer-readable media as recited in claim 25, wherein the completion process further comprises:

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if the process has been complete, terminating the file monitor and the protector;  
storing a billing end time in the billing information database of the user computer system;  
informing the server computer system of the billing end time; and  
flushing the main executable file and the one or more optional files stored in the storage  
device of the user computer system.

27. (Currently Amended) A system for renting a rental software program in a distributed computing environment, wherein the rental software program includes a main executable file and one or more optional files called by the main executable file that are executed by the main executable file to implement the rental software program without the rental software program being installed on the system, comprising:

a first means for pulling the main executable file out of a server computer system to begin execution of the rental software program; and

a second means for pulling the one or more optional files out of the server computer system in order to continue execution of the rental software program using the optional files; and

a storage means for storing the main executable file and the one or more optional files pulled out of the server computer system;

a process manager means for creating and running a process corresponding to the main executable file; suspending the process if the process requests the one or more optional files; and re-running the process if said process manager means receives the one or more optional files; and

a monitor means for monitoring the process to determine whether the process requests the one or more optional files; and hooking a message requesting the one or more optional files from the process; and

means for flushing the main executable file and the optional files of the rental software program from the storage means so that the rental software program is removed from the system when the rental is completed.

28. Cancelled.

29. (Previously Presented) The system as recited in claim 27, further comprising:

a protection means for protecting the rental software program to prevent an unauthorized use committed by said user computer system; and

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a billing database for storing billing information.

30. (Original) The system as recited in claim 29, wherein the billing information includes a billing start time, a billing end time and a name of the rental software program.

31. Cancelled.

32. (Currently Amended) A system for providing a rental software program in a distributed computing environment, wherein the rental software program includes a main executable file and one or more optional files called by the main executable file that are executed by the main executable file to implement the rental software program without the rental software program being installed on the user computer system, comprising:

a first means for pushing the main executable file into a user computer system to begin execution of the rental software program;

a second means for pushing the one or more optional files into the user computer system in order to continue execution of the rental software program using the optional files; and

a storage means for storing the main executable file and the one or more optional files pulled out of the server computer system;

a process manager means for creating and running a process corresponding to the main executable file; suspending the process if the process requests the one or more optional files; and re-running the process if said process manager means receives the one or more optional files; and

a monitor means for monitoring the process to determine whether the process requests the one or more optional files; and hooking a message requesting the one or more optional files from the process; and

means for flushing the main executable file and the optional files of the rental software program from the storage means so that the rental software program is removed from the user computer system when the rental is completed.

33. (Original) The system as recited in claim 30, wherein said first and second means are intended for advertisement.

34. (Original) The system as recited in claim 30, wherein said first and second means are

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intended for freeware.

35. (Original) The system as recited in claim 32, further comprising:
- a program database for storing path information of the main executable file, a list of rental software programs and a list of the optional files;
  - an analyzing means for analyzing a new rental software program when the new rental software program is installed, wherein said analyzing means stores the path information of the main executable file and a list of the optional files, associated with the new rental software program, in said program database; and
  - a storage means for storing the main executable file and the one or more optional files.

36. (Currently Amended) A system for renting a rental software program, wherein the system includes at least one client computer system and a server computer system and the rental software program includes a main executable file and one or more optional files called by the main executable file that are executed by the main executable file to implement the rental software program without the rental software program being installed on the user computer system, comprising:

- a first means for pulling the main executable file into a user computer system to begin execution of the rental software program;
- a second means for pulling the one or more optional files into the user computer system in order to continue execution of the rental software program using the optional files; and
- a storage means for storing the main executable file and the one or more optional files pulled out of the server computer system;
- a process manager means for creating and running a process corresponding to the main executable file; suspending the process if the process requests the one or more optional files; and re-running the process if said process manager means receives the one or more optional files; and
- a monitor means for monitoring the process to determine whether the process requests the one or more optional files; and hooking a message requesting the one or more optional files from the process; and
- means for flushing the main executable file and the optional files of the rental software program from the storage means so that the rental software program is removed from the user computer system when the rental is completed.

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37. Cancelled.

38. (Original) The system as recited in claim 36, further comprising:  
a protection means for protecting the rental software program to prevent an unauthorized use;  
and  
a billing database for storing billing information.

39. (Original) The system as recited in claim 38, wherein the billing information includes a  
billing start time, a billing end time and a name of the rental software program.

40. Cancelled.

41. (Original) The system as recited in claim 36, further comprising:  
a program database for storing path information of the main executable file, a list of rental  
software programs and a list of the optional files;  
an analyzing means for analyzing a new rental software program when the new rental  
software program is installed, wherein said analyzing means stores the path information of the main  
executable file and a list of the optional files, associated with the new rental software program, in  
said program database; and  
a storage means for storing the main executable file and the one or more optional files.

42. (Currently Amended) A server for renting a rental software program to a client computer  
without the rental software program being installed on the client computer, the server comprising:  
means for storing a software program that is rentable by a user, the software program  
including a main executable file and one or more optional files called by the main executable file  
that are executed by the main executable file to implement the rental software program;  
means for downloading the main executable file in response to a user's request to rent the  
software program and begin executing the rental software program; and  
means for automatically streaming the one or more optional files associated with the main  
executable file down to the client user's computer when requested by the client computer in order to  
continue executing of the rental software program using the optional files, wherein the server  
implements an install fee, user transparent rental technique since the optional files are automatically

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downloaded to the client computer as needed; and

the client computer further comprising a storage means for storing the main executable file and the one or more optional files pulled out of the server computer system;

a process manager means for creating and running a process corresponding to the main executable file; suspending the process if the process requests the one or more optional files; and re-running the process if said process manager means receives the one or more optional files; and

a monitor means for monitoring the process to determine whether the process requests the one or more optional files; and hooking a message requesting the one or more optional files from the process; and

means for flushing the main executable file and the optional files of the rental software program from the storage means so that the rental software program is removed from the client computer when the rental is completed.

43. (Original) The server as recited in claim 42 further comprising means for downloading a list of optional files to said user computer system when said server computer sends the main executable file to said client computer system and wherein the optional files includes a registry file.

44. (Original) The server as recited in claim 42 further comprising:

a verification means for verifying said user computer system by using identification information of said user computer system stored in a user-information database;

a program database for storing path information of the main executable file, a list of rental software programs and a list of the optional files;

an analyzing means for analyzing a new rental software program when the new rental software program is installed in said server computer system, wherein said analyzing means stores the path information of the main executable file and a list of the optional files, associated with the new rental software program, in said program database;

a storage means for storing the main executable file and the one or more optional files; and

a means for obtaining and sending the main executable file stored in said storage means when said user computer system selects the desirable rental software program; and obtaining and sending the one or more optional files stored in said storage means when said user computer system optionally requests the one or more optional files to said server computer system.

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45. (Original) The server as recited in claim 44 further comprising:

a billing means for processing charge or fee to be paid for the usage of the main executable file and the one or more optional files associated with the rental software program provided to said user computer system;

a log database for storing a log file necessary for recovering said server computer system when said server computer system is not operable due to a serious error;

a recovery means for recovering said server computer system by using the log file stored in said log database when said server computer system is not operable due to the serious error;

a schedule management means for managing a schedule of requests from said user computer system and another user computer system; and

a session management means for managing a communication session between said user computer system and said server computer system.

46. (Original) The server as recited in claim 45 further comprising means for sending a list of optional files to said user computer system when said server computer system sends the main executable file to said user computer system and wherein the optional files includes a registry file.

47. (Currently Amended) A client for renting a software program in a distributed computing environment, wherein the rental software program includes a main executable file and optional files without the rental software program being installed on the client, comprising:

means for requesting a rental software program from the server;

means for receiving the main executable file of the software program from the server to begin executing of the rental software program;

means for determining that an optional file is required by the main executable file, the optional file being called by the main executable file that are executed by the main executable file to implement the rental software program in order to continue execution of the rental software program using the optional files;

means for requesting the optional file from the server;

means for receiving the optional file;

a storage means for storing the main executable file, the one or more optional files contained in the rental software program if downloaded and a list of optional files downloaded from said server computer system;

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a process manager means further comprising means for creating and running a process corresponding to the main executable file, means for suspending the process if the process requests one or more optional files, and means for re-starting the process if said process manager means receives the one or more optional files from said server computer system; and

a monitor means for monitoring the process to determine whether the process requests the one or more optional files, and further comprising means for intercepting a message requesting the one or more optional files from the process, and means for automatically requesting the one or more optional files to said server computer system; and

means for flushing the main executable file and the optional files of the rental software program from the storage means so that the rental software program is removed from the client when the rental is completed.

48. Cancelled.

49. (Previously Presented) The client as recited in claim 47 further comprising:

a protection means for protecting the rental software program rented from said server computer system to prevent an unauthorized use committed by said user computer system;

a converting means for converting registry file information contained in the list of optional files into registry file information appropriate to said user computer system; and

a billing database for storing billing information.

50. (Original) The client as recited in claim 49, wherein the billing information includes a billing start time, a billing end time and a name of the rental software program selected by said user computer system.

51. (Original) The client as recited in claim 50, wherein said process manager means comprises means for flushing the main executable file and the one or more optional files stored in said storage means when the process is complete.